

Book Reviews

Mechanism and Theory in Food Chemistry. By W. S. Wong. Van Nostrand Reinhold, New York, 1989. 428 pp. ISBN 0-442-20753-0. Price: £34.50.

This book is divided into chapters on (1) Lipids, (2) Proteins, (3) Carbohydrates, (4) Colorants, (5) Enzymes, (6) Flavors, (7) Sweeteners, (8) Natural Toxicants, (9) Additives and (10) Vitamins. This is followed by selected reading and references, and three appendices, entitled 'General kinetics of olefin autoxidation', 'Singlet oxygen' and 'Where do the radicals come from?'

The author aims to present information in a manner more challenging to the food science or food technology student with a strong chemistry background. The stated primary function of the book, therefore, is to cover important topics in food chemistry, by focusing on the mechanisms underlying the chemical reactions which occur in food during processing and storage. On the whole, this objective has been achieved. The sections on the origin of colour and the effects of irradiation on proteins, for example, are well-covered and are not usually present in a single section in alternative books on food chemistry. On the other hand, much of the information covered, for example on meat and on sweeteners, is readily available elsewhere. One criticism is that coverage of topics is patchy. For example, the coverage of the main plant toxicants is good, but there is no information on animal toxicants or on pesticides. A whole chapter is devoted to flavour components, but no mention is made of binding of flavour compounds to proteins and lipids. In the chapter on proteins, meat is covered in detail, but no mention is made of egg, soya or textured proteins. The book has no sections on the chemistry of water or minerals.

This book has two rather annoying features. One is that there are very few cross-references to relevant information in other chapters. For example, the reaction of sulphite with thiamin is covered in the chapter on vitamins, but this is not mentioned in the section on sulphite in the food additives chapter. Flavour potentiators are covered in the chapter on sweeteners, but this is not mentioned in the chapter on flavour components. The second annoying feature is that many 'figures' are treated as 'equations' and therefore have no title. In addition, they are frequently located some distance from the text which refers to them.

In summary, this is a useful text for the advanced undergraduate student who already possesses a grasp of the basics of food chemistry. Certain concepts are assumed, for example the theory of enzyme action. In addition, the chemistry of fatty acids, monosaccharides and amino acids is not covered. The book possesses some errors, but these are mainly typographical. It is good value for money.

Jenny Ames

Preservatives in the Food, Pharmaceutical and Environmental Industries. Society for Applied Bacteriology, Technical Series No. 22. Edited by R. G. Board, M. C. Allwood & J. G. Banks. Blackwell, Oxford, 1987. xi + 305 pp. ISBN 0632-01727-9. Price: £40.00.

This book is based on a demonstration meeting of the Society for Applied Bacteriology and includes eighteen chapters dealing with many aspects of the attempts to preserve materials from the deprivations of micro-organisms.

Much of the book is taken up with detailed surveys of available biocides and descriptions of the methods available for evaluating their effectiveness, in particular commodities. Thus, there are chapters dealing with biocides for wool, wood preservation, building materials, marine antifouling paints, inhibition of sulphate-reducing bacteria, and pharmaceutical products, with separate chapters on sterile products and cosmetics and toiletries. In general, these chapters give exhaustive and useful surveys of the compounds and methodologies used.

Four chapters deal with investigations into particular applications, namely the use of carbon dioxide in milk, techniques for the preservation during transportation of samples for microbiological analysis, the use of urea for the preservation of high moisture grains and approaches to farm packing of beetroot.

The remaining four chapters are concerned with the modes of action of biocides. One presents an overview of the roles of salt, nitrite and heat in the preservation of cured meats. Another presents an excellent, detailed